REMARKS

Claims 1-6 and 10-22 are active. Page 7 of the specification has been amended to correct a typographical error in translation. Support for this change is evident from the surrounding context of the corrected sentence and from the international application. Claim 1 has been amended to further specify "an activated pyrrole monomer". Support for activated pyrroles is found in the specification, for example, at page 10, lines 29-32. New Claim 22 finds support on in original Claim 1 and on page 11, lines 10-13 of the specification. Accordingly, the Applicants do not believe that any new matter has been introduced.

Rejection—35 U.S.C. §112, first paragraph

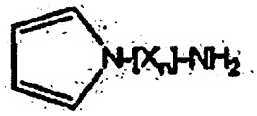
Claim 1 was rejected under 35 U.S.C. 112, first paragraph, as lacking adequate written description for the phrase "coupling pyrrole monomer directly to a protein to be attached to said conductive support". Claim 1 has been amended to refer to "coupling an activated pyrrole monomer" and specific activated pyrrole monomers, including those described in new Claim 22, are described in the specification, see e.g., page 11, lines 10-14.

Terms in the specification must not be read apart from how those terms are understood by those with skill in the art at the time of invention. When read in light of the art, the expression "protein-pyrrole" employed in the specification must be understood in the same way as the expression "protein-biotin" is understood, see for example:

http://www.piercenet.com/products/browse.cfm?fldID=3D60B635-A8D4-407C-BF9C-1E98BF160B4D.

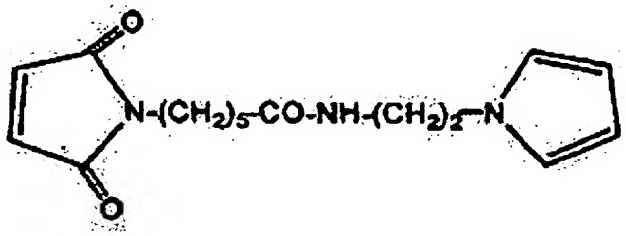
On page 7, lines 18-20 of the specification, it is stated that the expression "pyrrole monomer" means a monomer of pyrrole or a polymerizable derivative of pyrrole. As a derivative of pyrrole, mention may be made, for example, of methyl pyrrole, or substituted or unsubstituted pyrrole dimers. Moreover, mention can be made of alkylamino derivative as

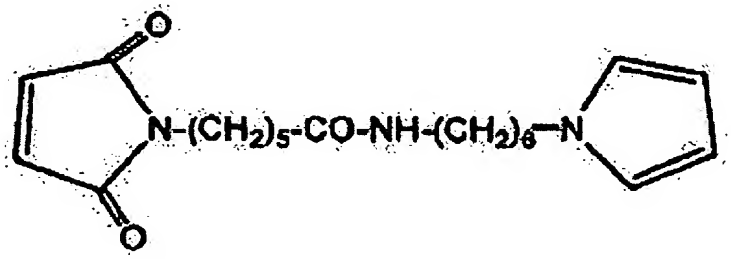
exemplified starting on page 14 of the specification, the synthesis of maleimide pyrrole) of formula:

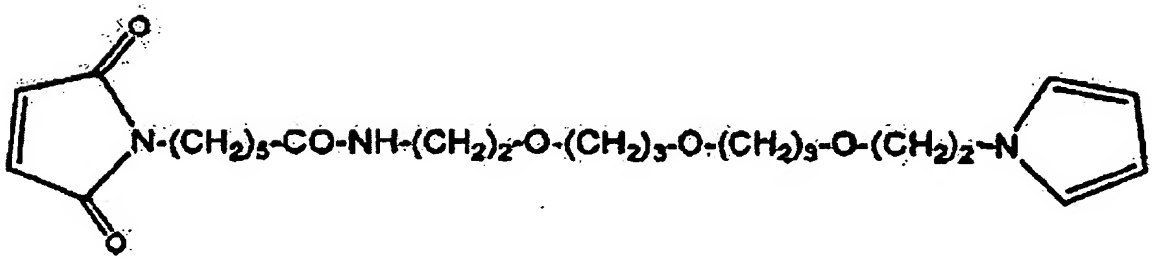


wherein X is a -CH2- group, n being an integer such that $1 \leq n \leq 20$.

The coupling of the protein to the pyrrole monomer occurs only after the activation of the pyrrole monomer (page 10, line 29 to page 11, line 7). Such an activation can be carried out by means of N-hydroxysulfosuccinimide or N-maleimide (page 11, lines 5-7). As example, activated pyrrole monomer may be chosen among the following (page 11, lines 10-13):







Thus, the specification discloses how to couple a protein to an activated pyrrole monomer. (However, as discussed in more detail below, the present application does not describe, nor claim, the use of an oligonucleotide linker between a pyrrolyl residue and a peptide.) Accordingly, the Applicants respectfully request that this rejection be withdrawn.

Livache et al.

Livache was previously cited as prior art and as disclosing coupling a pyrrolyl residue to a dT10 oliognucleotide linker which is coupled to a synthetic peptide. In Livache it is stated that the pyrrole ODN and pyrrole peptides were prepared by coupling a pyrrolyl residue on an ODN or a synthetic peptides through a dT10 oligonucleotide linker (page 630, §1). A dT10 oligonucleotide is a large molecule, corresponding to ten residues of deoxythymidine (dT). The coupling of an ODN on a peptide as proposed in Livache can make it possible to improve (1) the peptide purification thanks to a "standard" solubility (an HPLC column in neutral conditions instead of in acid conditions can thus be used) and (2) its detection (UV at 260 nm). Nevertheless, this document neither describes, nor suggests to couple directly an activated pyrrole to a protein.

Moreover, no indication is given concerning any experimental procedure showing the possibility to apply the process involving the dT10 oligonucleotide to peptides and proteins. Livache et al. explicitly shows the possibility to build ODNpyrrole using an oligonucleotide synthesizer (page 2916, col. 2, §2). Nevertheless, such a system is not applicable to protein as the protein chemistry is different from the nucleoside chemistry. The information given in Livache is not sufficient to enable a person skilled in the art to apply the dT10 oligonucleotide linker process to a protein, because this article lacks of disclosure and because of the fundamental difference between the chemistry of peptides and nucleotides.

On the other hand, the present application corresponds to coupling a peptide to an activated pyrrole monomer whereas Livache suggests to use a dT10 linker between a pyrrolyl residue and a peptide. Accordingly, the Applicants respectfully submit that Livache would not apply to the present claims.

CONCLUSION

In view of the above amendments and remarks, the Applicants respectfully submit that this application is ready for allowance. Early notification of such is earnestly requested.

Respectfully submitted,

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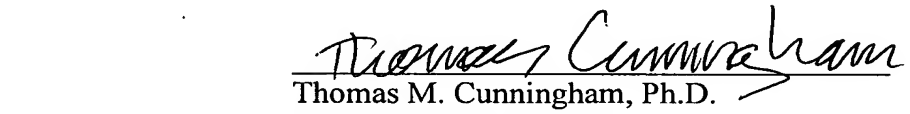

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